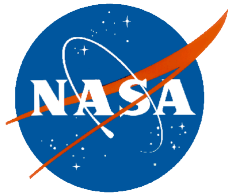


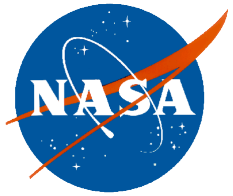
CALIBRATION STATUS

October 21, 2003

Steve Gaiser

Calibration Status Agenda

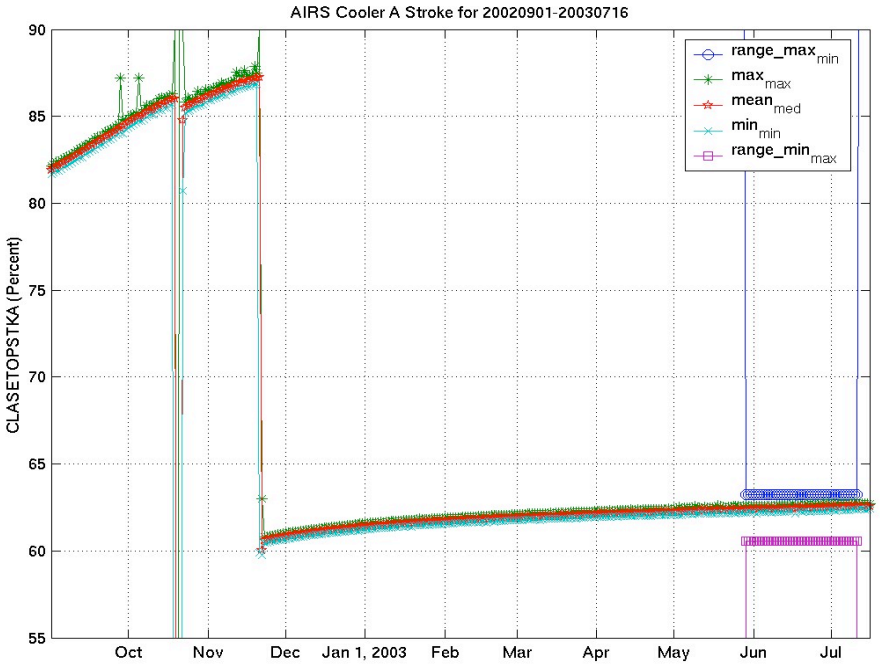
- Instrument Stability
- Radiometric Performance
- Open Calibration Issues



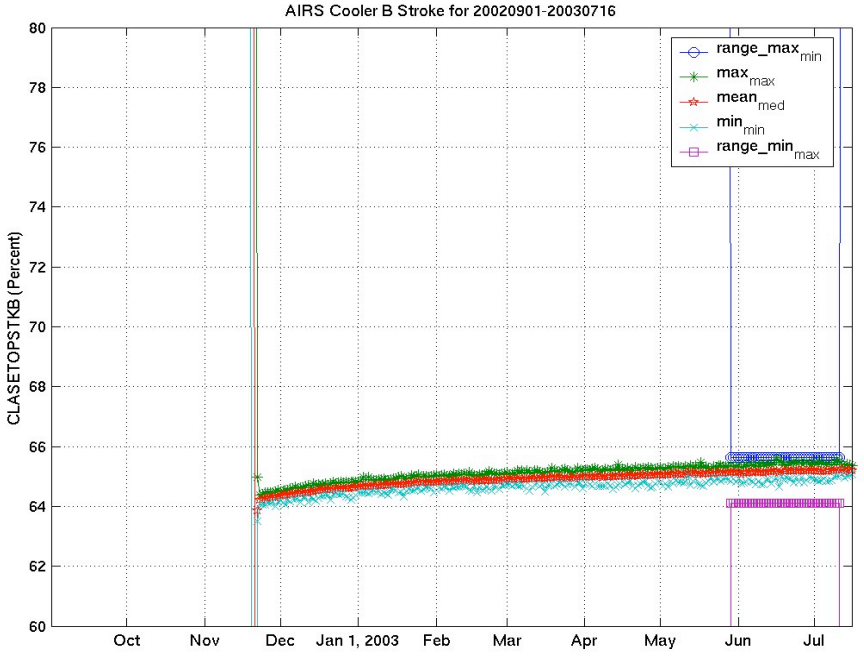
Instrument Stability

- AIRS/AMSU-A Engineering Telemetry Review was held Aug. 18, 2003.
- Steve Broberg inspected ~500 AIRS parameters and ~200 AMSU-A parameters from Sept. 2002 – July 2003
- All parameters in bounds
- Only AIRS cooler and chopper show trends; neither is a concern for years.
- AIRS remains spectrally stable (< 0.5% FWHM p-p)

AIRS Cooler Telemetry Trends

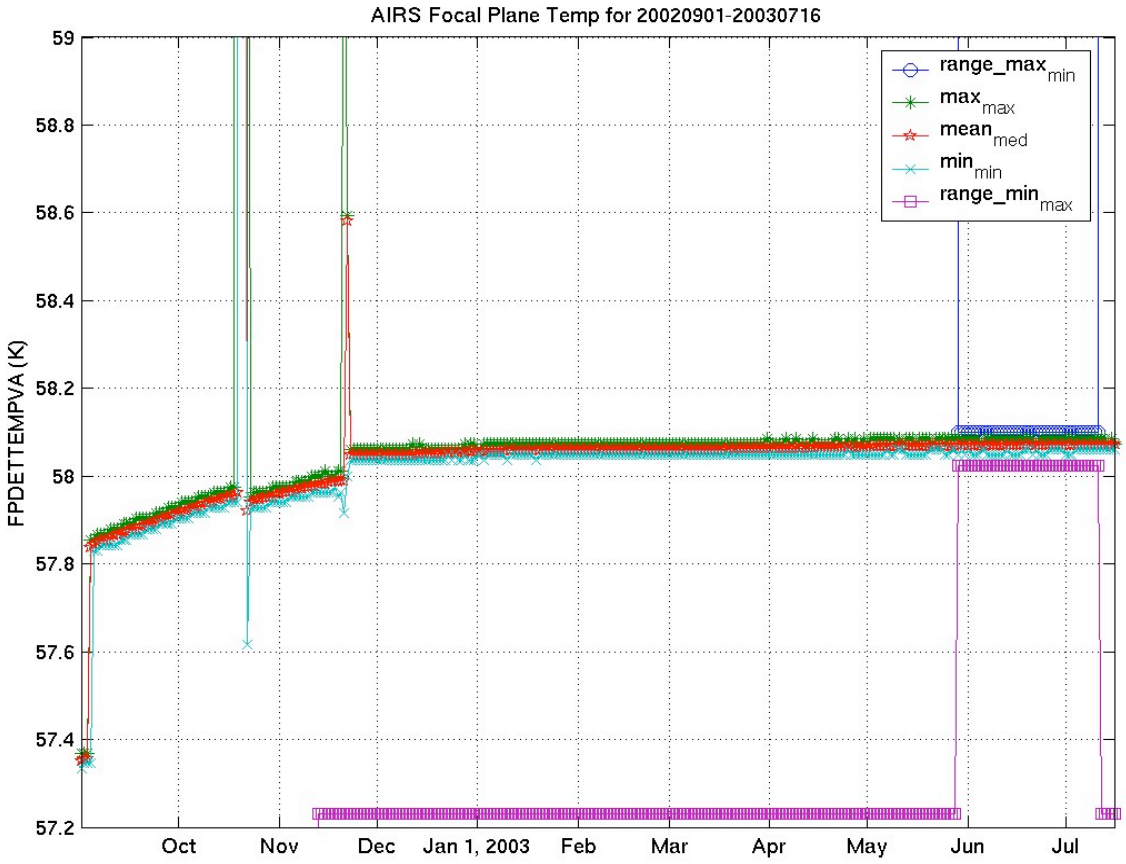


S Broberg



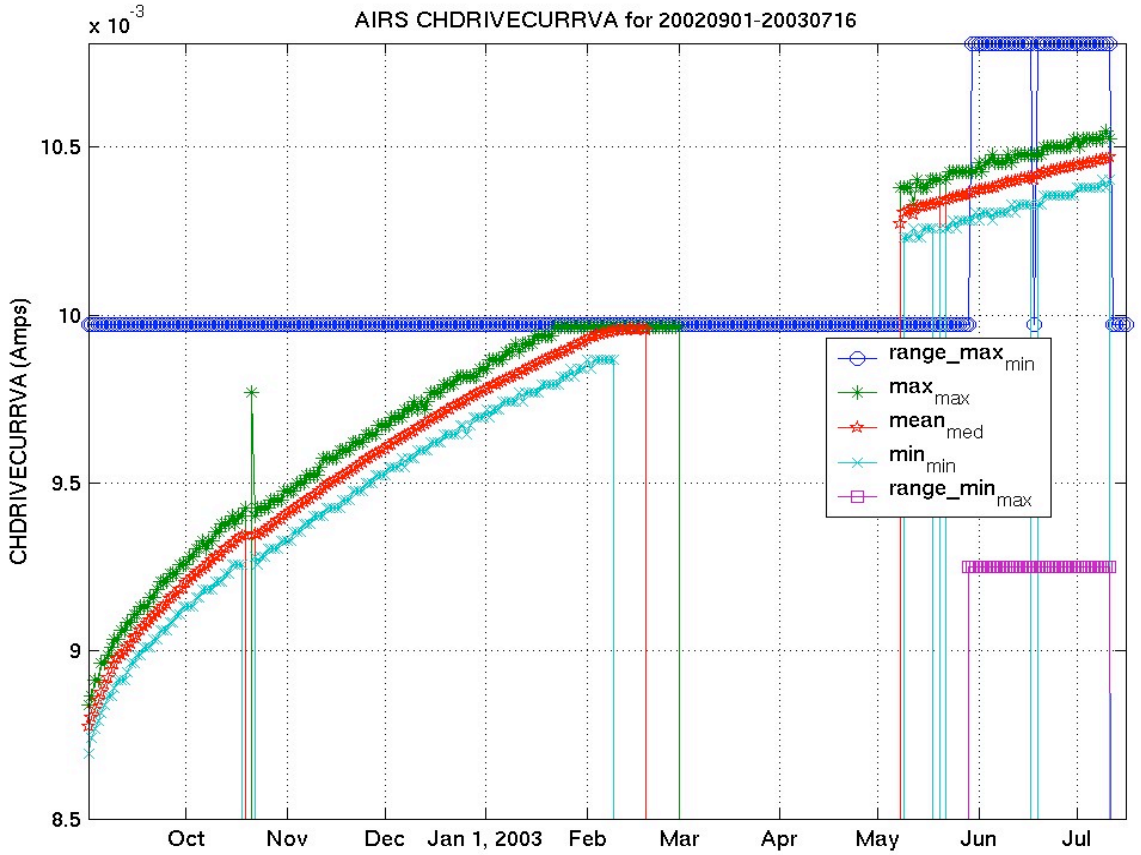
S Broberg

AIRS Focal Plane Temperature



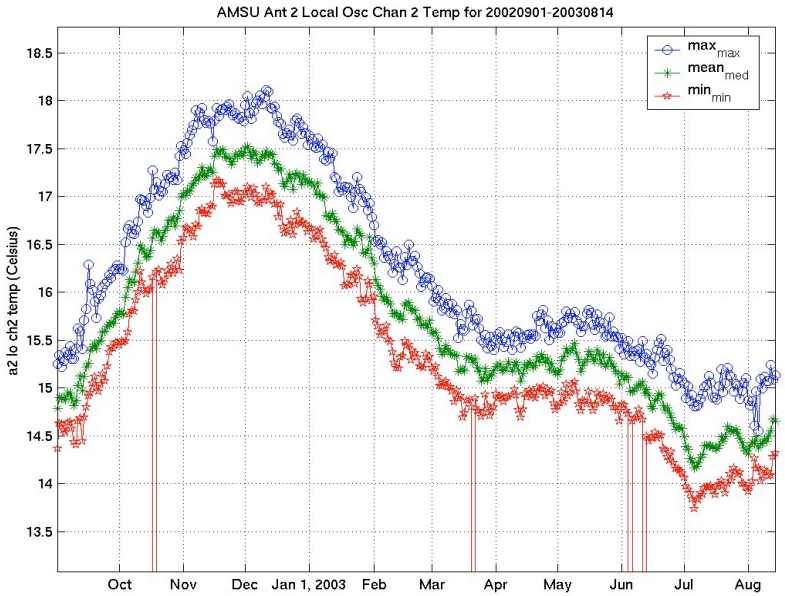
S Broberg

AIRS Chopper Telemetry Trend

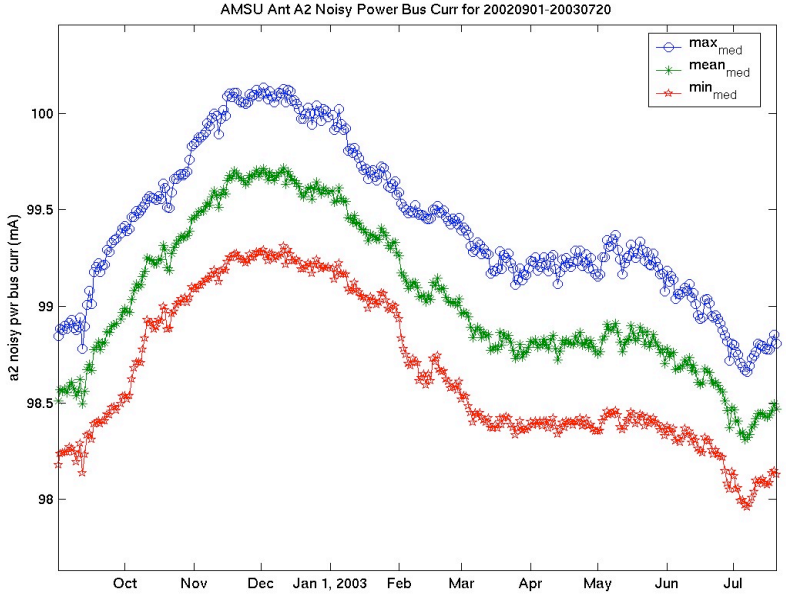


S Broberg

AMSU Telemetry Peculiarity



S Broberg

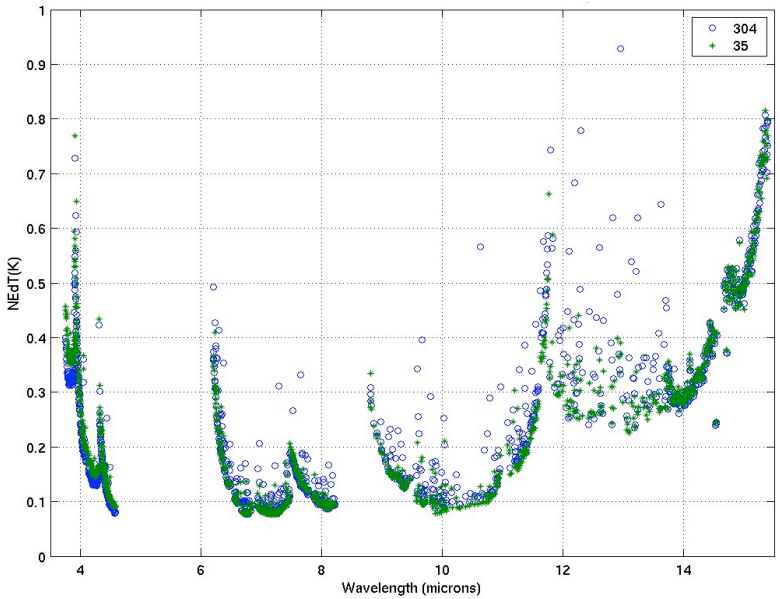


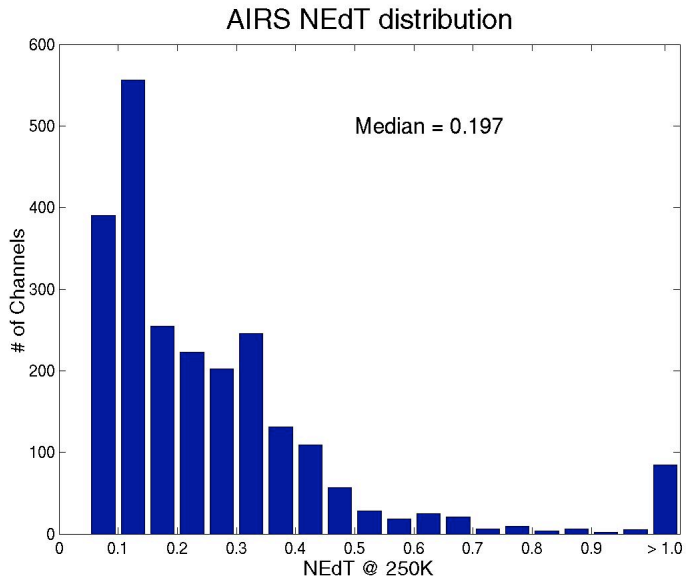
S Broberg

AIRS Radiometric Performance

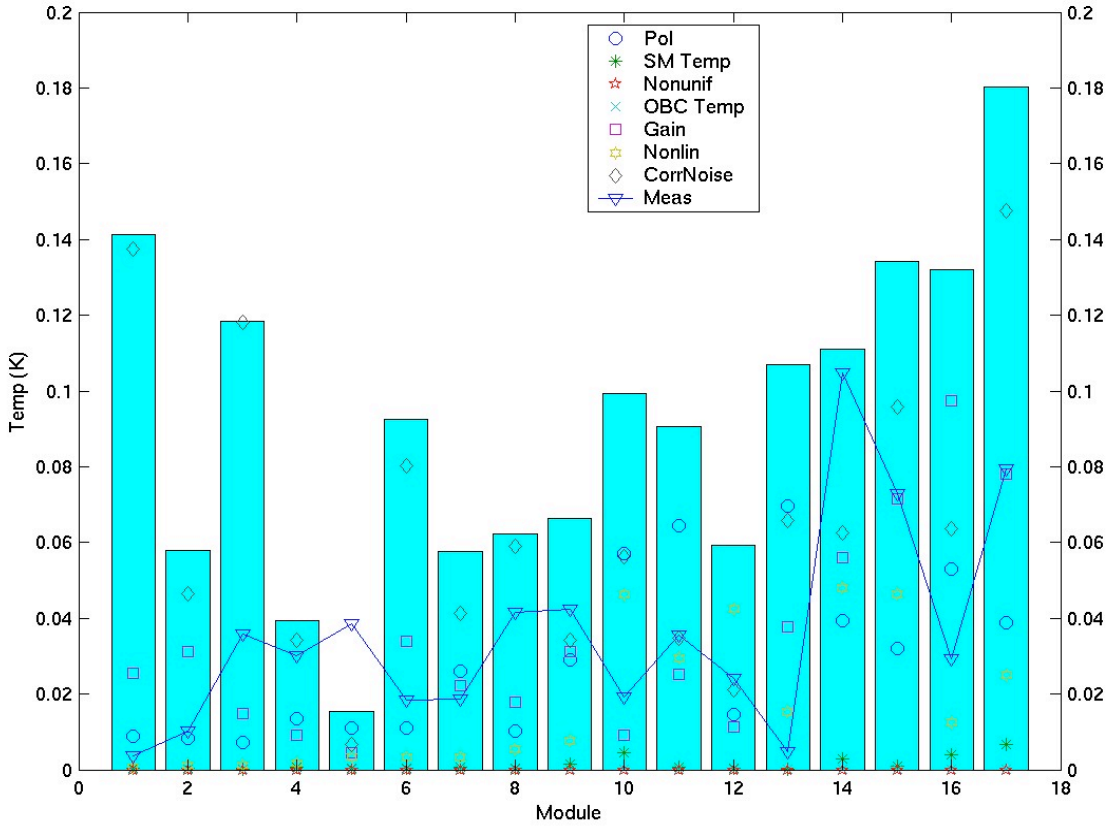
- Meeting requirement for accuracy
- Exceeding requirement for noise
- Extremely stable (Aumann)

AIRS Noise Levels





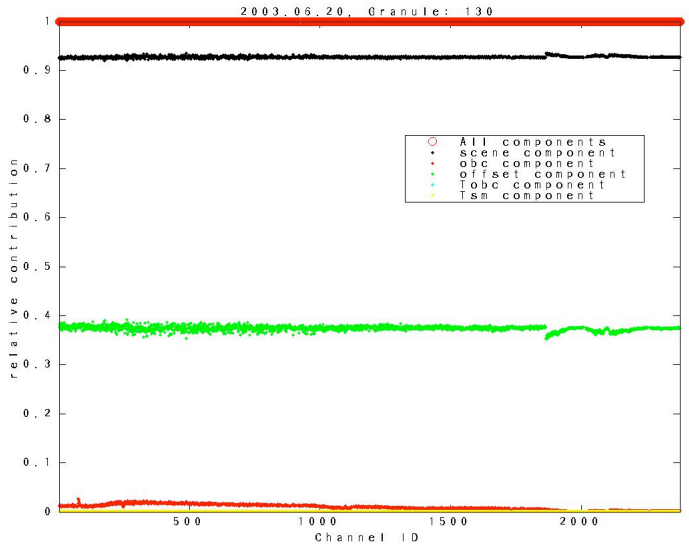
Predicted AIRS Radiometric Accuracy



T. Pagano

Open Calibration Issues

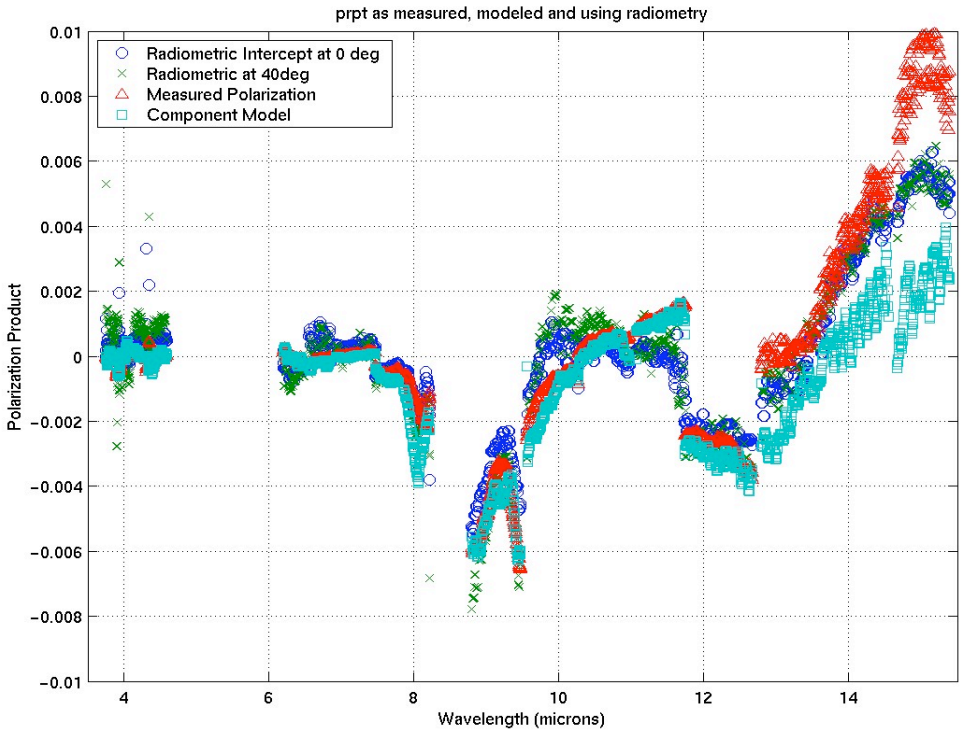
- **Smoothing**
  - ***Offsets per scanline***
  - ***Gains per granule***
  - ***Would impact distribution of errors; very small decrease in noise possible; no change to mean bias***



T. Hearty

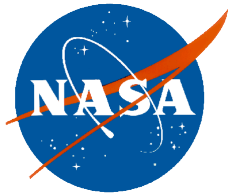
Open Calibration Issues

- **Polarization correction:**
  - ***< 1% everywhere***
  - ***Generally < 0.2%***
  - ***Re-analyzing pre-flight data***



Open Calibration Issues

- "Popping"
  - *Current algorithm has threshold for both magnitude and duration*
  - *Short-duration pops observed by D. Staelin et. al.*
  - *Effects only a handful of channels*
  - *May not be addressed if no impact is shown*



Calibration Status Summary

- **AIRS is well calibrated.**
- **Opportunities remain to squeeze small additional improvements from calibration routines**